

## National Jewish Health Receives \$31 Million to Study Infections Associated with Eczema

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### Understanding, containing drug-resistant staph infections a major focus

The National Institute of Allergy and Infectious Disease has awarded a five-year \$31 million contract to National Jewish Health, which is leading a consortium of academic medical centers seeking to better understand skin infections associated with [atopic dermatitis](#). The researchers will focus on antibiotic-resistant staphylococcus aureus (MRSA) infections and widespread viral infections of the skin, both of which are more prevalent among atopic dermatitis patients.

"MRSA is a significant public health threat that needs to be contained," said principal investigator Donald Leung, MD, PhD, Professor of Allergy and Clinical Immunology at National Jewish Health. "We want to find out why these patients are susceptible to staph infections, particularly MRSA, and learn how we can prevent them from developing and spreading to others."

Atopic dermatitis, also known as eczema, is the most common skin disease in the general population, affecting approximately 20 percent of children and two percent of adults in the United States. It is a chronic disease characterized by repeated bouts of dry, itchy, irritated skin, which can make life miserable. Patients from around the country come to National Jewish Health for treatment of their severe atopic dermatitis.

Atopic dermatitis patients are particularly prone to skin infections. Sixty to 90 percent of patients have some staph organisms on their skin, and 30 percent are prone to overt infections, which can cause cracked and oozing lesions on their skin.

Because of their frequent staph infections, and possibly because of repeated antibiotic use to fight the infections, atopic dermatitis patients frequently develop MRSA infections. Although MRSA patients are isolated at National Jewish Health and other hospitals, these patients commonly have contact with friends and family outside the healthcare setting, and could be a source of infections to a wider population.

MRSA infections have emerged in recent years as a significant health problem. They are more difficult to treat, because the staph organisms are resistant to penicillin and several other first-line antibiotics. While they often cause disease no more severe than do non-resistant strains, they can cause severe disease and even death.

Researchers in the Atopic Dermatitis Research Network (ADRN), will seek to better understand why atopic dermatitis patients are susceptible to staph and other bacterial and viral infections. They will evaluate atopic dermatitis patients' genes, innate and adaptive immune responses and skin barrier to identify factors that make them susceptible to these infections. The researchers also plan to conduct a clinical trial to see if vitamin D can help reduce or prevent staph colonization and infection. Researchers will be recruiting large numbers of atopic dermatitis patients to take part in clinical studies over the next five years. If you are interested in learning more about the Atopic Dermatitis Research Network, please call 1-888-413-5852.

Staph infections, however, are not the only potentially hazardous infections associated with atopic dermatitis. Atopic dermatitis patients are also susceptible to herpes virus infections, called eczema herpeticum, and a hazardous, potentially deadly side effect of smallpox vaccinations, eczema vaccinatum, which occurs when the vaccinia virus currently used for the smallpox vaccine, replicates uncontrollably and circulates through the entire body.

The ADRN research consortium is building on a previous five-year contract, which created the Atopic Dermatitis Vaccinia Network and identified several factors related to patients' susceptibility to eczema vaccinatum.

The Atopic Dermatitis Research Network will include researchers from National Jewish Health, Emory University, Boston Children's Hospital, Johns Hopkins University, University of Rochester, Oregon Health and Sciences University, La Jolla Institute for Allergy & Immunology, University of California Los Angeles, University of California San Diego, and University of Minnesota.

National Jewish Health is known worldwide for treatment of patients with respiratory, cardiac, immune and related disorders, and for groundbreaking medical research. Founded in 1899 as a nonprofit hospital, National Jewish remains the only facility in the world dedicated exclusively to these disorders. Since 1998, *U.S. News & World Report* has ranked National Jewish the #1 respiratory hospital in the nation.

**National Jewish Health** is the leading respiratory hospital in the nation. Founded 121 years ago as a nonprofit hospital, National Jewish Health today is the only facility in the world dedicated exclusively to groundbreaking medical research and treatment of patients with respiratory, cardiac, immune and related disorders. Patients and families come to National Jewish Health from around the world to receive cutting-edge, comprehensive, coordinated care. To learn more, visit the [media resources page](#).

## Media Contacts

Our team is available to arrange interviews, discuss events and story ideas.

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